

ATTACHMENT 1

PLAINTIFFS' PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW ON LIMITED REMAND

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

ENVIRONMENT TEXAS CITIZEN LOBBY, INC.,
and SIERRA CLUB,

Plaintiffs,

C.A. No. 4:10-cv-4969

v.

EXXONMOBIL CORPORATION,
EXXONMOBIL CHEMICAL COMPANY, and
EXXONMOBIL REFINING AND SUPPLY COMPANY,

Defendants.

**[PROPOSED] FINDINGS OF FACT
AND CONCLUSIONS OF LAW ON LIMITED REMAND**

Pursuant to the limited remand of the Court of Appeals for the Fifth Circuit, *Environment Texas Citizen Lobby, et al. v. ExxonMobil Corporation*, 968 F.3d 357 (5th Cir. 2020) (filed in the District Court as ECF No. 293), the Court makes the following revised and additional findings of fact and conclusions of law regarding the traceability element of the standing analysis and the Act of God defense. As also instructed by the Fifth Circuit, *id.* at p. 23, 968 F.3d at 374, this Court has reassessed its imposition of a \$19,951,278 civil penalty in light of these limited additional findings, and determines that this amount is justified and appropriate. Any finding of fact that should be construed as a conclusion of law is

hereby adopted as such. Any conclusion of law that should be construed as a finding of fact is hereby adopted as such.

The following revised and additional findings and conclusions amend and supplement the Court's Revised Findings of Fact and Conclusions of Law entered on April 26, 2017 (ECF No. 257). To the extent not amended or supplemented by the findings and conclusions below, the Court's prior Revised Findings of Fact and Conclusions of Law remain in effect. References to headings and paragraph numbers below are to ECF No. 257.

III. REVISED AND ADDITIONAL CONCLUSIONS OF LAW

A. Standing

b. Traceability

[FOLLOWING ¶ 6:]

6A. The Fifth Circuit, however, has directed the Court to make additional findings with respect to the traceability requirement of the standing analysis. The Court follows the guidance set forth by the Fifth Circuit on page 17 of its opinion, 968 F.3d at 371. The Circuit has already determined that, consistent with its guidance, “the district court’s findings support traceability for a substantial number of Exxon’s violations.” *Id.* The Court rejects the proposed findings submitted by Exxon with respect to standing because they are inconsistent with the Fifth Circuit’s holding on traceability and with its directive to this Court on limited

remand. First, the Fifth Circuit did not direct this Court to revisit its recitation of the established jurisprudence on standing in environmental cases. Second, Exxon continues to press its claim that Plaintiffs' members' injuries are traceable only to five "correlated" emission events. That argument was explicitly rejected by the Fifth Circuit as

not consistent with the traceability requirement, which requires less of a causal connection than tort law (and even tort causation would not require such specific proof). . . . [T]he standard is that the injury be *fairly* traceable to the challenged conduct, not definitively so. . . . Indeed, our court has already rejected Exxon's argument: Clean Air Act plaintiffs need not "connect the exact time of their injuries with the exact time of an alleged violation."

Env't Texas, 968 F.3d at 368 (citations omitted; emphasis in original). Third, Exxon's proposed findings ignore the Fifth Circuit's holding that

it does not follow from the need to establish standing for each violation that separate proof of standing is needed for each violation. As we have discussed, many courts – including our court and the Supreme Court – have allowed the same testimony to support standing for multiple violations ... And, as always, a factfinder may rely on circumstantial evidence and draw reasonable inferences from the evidence.

Id. at 367. Fourth, Exxon simply fails to follow the criteria the Fifth Circuit instructed this Court to apply in "group[ing] violations by type and magnitude" in making its revised findings on traceability. *Id.* at 371.

6B. As in the previous order from this Court, *Env't Tex. Citizen Lobby v. ExxonMobil Corp.*, No. H-10-4969, 2017 WL 2331679, at *3, *12 (S.D. Tex. April 26, 2017) (ECF No. 257), the Court will look to stipulated spreadsheets containing

information about (a) emission events that released greater than a certain threshold quantity of pollutants and were thus reported to the Texas Commission on Environmental Quality (“TCEQ”) on the State of Texas Environmental Electronic Reporting System (“STEERS”) (referred to as “reportable events”; *see* Plaintiffs’ Exhibits 1A, 2A, 2C, 2E, 587, 589, 591, 593) and (b) emission events that released less than the threshold quantity of pollutants triggering a report on STEERS (referred to as “recordable events”; *see* Plaintiffs’ Exhibits 1B, 2B, 2D, 2F, 588, 590, 592, 594). On the first remand of this case, Plaintiffs submitted resorted versions of Plaintiffs’ Exhibits 587-94. *See Description of Re-Sorted Versions of Plaintiffs’ Exhibits 587-594*, ECF No. 253, Exhibit 3. The resorted spreadsheets (ECF No. 253, Exhibits 4-11) showed how repeated violations involving specific pollutants (under Count I) and involving specific emission limits (Count II) were identified and calculated. The spreadsheets were submitted to the Court in native format. The Court reviewed the resorted exhibits, found they were consistent with the spreadsheets initially submitted at trial, and found that they provided evidentiary support for the number of actionable violations ultimately found by the Court.

6C. As evidentiary support for the traceability of certain of the 16,386 days of actionable violations found by this Court (see Section III.B, below), Plaintiffs have now provided revised versions of the resorted spreadsheets submitted on the

first remand, in both pdf and native formats. ECF No. [XXX], Exhibits 2-7.¹ The only difference between the revised versions of the spreadsheets and those from the first remand is a column added (entitled “Traceability Codes”) that identifies which violations meet one or more of the traceability criteria set forth by the Fifth Circuit, described below. *See Description of Revised Versions of Plaintiffs’ Exhibits 587-88 and 591-94*, ECF No. [XXX], Exhibit 1.² The Court has reviewed these exhibits and finds they are consistent with the spreadsheets initially submitted at trial. The Court has applied the Fifth Circuit’s traceability guidance to the violations that occurred during 241 Reportable Events and 3,735 Recordable Events, and makes the following additional findings regarding traceability.

¹ The Court notes that Plaintiffs have not submitted revised versions of Plaintiffs’ Exhibits 589 and 590. Because violations of the MAERT limits in Refinery Flexible Permit 18287 under Count II (as reflected in Plaintiffs’ Exhibits 589 and 590) overlap with, and are fewer in number than, the actionable violations found by this Court under Special Conditions 38 and 39 of Permit 18287 under Count I, revised versions of Plaintiffs’ Exhibits 589 and 590 are unnecessary. *See Env’t Tex. Citizen Lobby*, 2017 WL 2331679, at *18, n.184 (ECF No. 257, p. 57, n.184).

² Many of the violations at issue satisfy more than one of the Fifth Circuit’s traceability criteria. In the following findings, each violation is categorized according to which of the criteria it satisfies, which means that some of the violations are listed under more than one criterion. The Court corrects for this by counting each day of violation only once in the final tally, by Count, of traceable violations used for penalty assessment purposes.

1. *Violations That Could Cause or Contribute To Flaring, Smoke, or Haze.*

6D. The Fifth Circuit held, “For any violation that could cause or contribute to flaring, smoke, or haze, the district court’s findings have established traceability.

The district court need only decide which violations fall within this category.”

Env’t Texas, 968 F.3d at 371. The Circuit determined that “the geographical nexus inquiry is unnecessary for any violation that could have caused or contributed to flaring, smoke, or haze even if the emission was of a small magnitude.” *Id.*

Nonetheless, Plaintiffs have voluntarily omitted from their tally of such violations any emission of a pollutant totaling one pound or less. The omission of these smaller violations addresses the Fifth Circuit’s focus on “small magnitude” violations of zero-emission limits. *See, e.g., id.* at 366-67, 370. The Court adopts Plaintiffs’ voluntary limitation on the Circuit Court’s traceability guidance, and the numbers of traceable violations enumerated below reflect the subtraction of these violations.

6E. The Fifth Circuit specifically held that all of the Count IV violations “consist of flaring events that caused excessive smoke.” *Env’t Texas*, 968 F.3d at 371. This Court has already found 44 days of violation under Count IV. *Env’t Tex. Citizen Lobby*, 2017 WL 2331679, at *20 (ECF No. 257, p. 64). The Count V violations consist exclusively of violations relating to the absence of pilot flames at

flares. This Court has already found 32 days of violation under Count V. *Id.* at *21, *30 (ECF No. 257, pp. 64-65, 94-95). Further, Plaintiffs have indicated, on the revised spreadsheets described above, which violations caused or contributed to flaring (coded as “F”), smoke (coded as “S”), or haze (coded as “H”). The number of days of traceable violations that caused or contributed to flaring, smoke, or haze is set forth below.

6F. Flaring: The “Emission Point” column in the stipulated spreadsheets shows which violations occurred at a flare; for these violations, an “F” has been added to Traceability Code column. As reflected in the revised spreadsheets, the following number of days of violations involved flaring under Counts I and II:

Count I

Refinery reportable events (Ex. 3)	223
Refinery recordable events (Ex. 4)	2,305

Count II

Olefins plant reportable events (Ex. 5)	388
Olefins plant recordable events (Ex. 6)	399
Chemical plant reportable events (Ex. 7)	143
Chemical plant recordable events (Ex. 8)	578

In addition, as reflected in the original stipulated spreadsheets, the following number of days of violations involved flaring under Counts III and IV:

<u>Count III</u> (Plaintiffs’ Ex. 595)	15
<u>Count IV</u> (Plaintiffs’ Ex. 596)	44

Count V (Plaintiffs' Ex. 597)	32
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The total number of days of violations involving flaring is 4,127.

6G. Smoke: Opacity violations involve smoke, *e.g.*, *Martin v. Weyerhauser Co.*, 616 F. Supp. 2d 1210, 1213 (E.D. Ok. 2007) (opacity is determined from the color of smoke), and particulate matter violations involve smoke, *e.g.*, *Garcia v. BRK Brands, Inc.*, 266 F. Supp. 2d 566, 568 (S.D. Tex. 2003) (particulate matter is smoke and soot). The revised spreadsheets show the following number of days of violations that caused or contributed to smoke (which are coded with an "S" in the Traceability Code column):

Opacity violations

Count I

Refinery reportable events (Ex. 3)	36
Refinery recordable events (Ex. 4)	1

Count II

Olefins plant reportable events (Ex. 5)	42
Chemical plant reportable events (Ex. 7)	2

Particulate matter violations

Count I

Refinery reportable events (Ex. 3)	92
Refinery recordable events (Ex. 4)	178

Count II

Olefins plant recordable events (Ex. 6)	161
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Chemical plant reportable events (Ex. 7)	1
Chemical plant recordable events (Ex. 8)	7

In addition, as reflected in the original stipulated spreadsheets, the following number of days of violations involved “excessive smoke” under Count IV:

<u>Count IV</u>	44
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The total number of days of violations causing or contributing to smoke is 564.

6H. Haze: Ground-level ozone, or “smog,” is visible haze. *Assoc. of Irritated Residents v. C & R Vanderham Dairy*, No. 1:05-cv-01593, 2007 WL 2815038, at *15 (E.D. Cal. September 25, 2007); *see also* Tr. 7-147:19-21 [Brooks] (ozone is a constituent of smog); PX 527 (same); Plaintiffs’ Proposed Findings of Fact and Conclusions of Law (“FOF”) [Doc. No. 218] ¶ 696.³ Industrial emissions of nitrogen oxides (“NOx”), volatile organic compounds (“VOCs”), and carbon monoxide (“CO”) react in the presence of sunlight to form ground-level ozone. PX 527; FOF ¶ 699; *see also* PX 520; PX 521, p. 2; PX 522, pp. 2-3; FOF ¶¶ 659, 668. The TCEQ determined that emissions of “highly reactive” volatile organic compounds (“HRVOCs”) – ethylene, propylene, 1,3-butadiene, and butenes – contribute to the formation of ozone in the Houston Ship Channel. Isoprene, formaldehyde, acetaldehyde, toluene, ethyltoluene, pentene, trimethylbenzene, and xylenes are pollutants that also contribute to the formation of

³ “FOF” refers to the numbered findings of fact in ECF No. 218.

ozone, and, in particular, are pollutants that play a major role in ozone formation in the Houston Ship Channel area. PX 527; PX 476, p. 25; Tr. 7-143:17-7-144:1 [Brooks]; Tr. 8-205:12-19 [Cabe]; FOF ¶¶ 699-701, 707, 708; *see also* 30 Tex. Admin. Code §115.10(21)(a) (defining HRVOCs for Harris County). Particulate matter and opacity violations also cause or contribute to haze. *Yazzie v. EPA*, 851 F.3d 960, 965 (9th Cir. 2017) (particulate matter produces haze); *Sierra Club v. Union Elec. Co.*, No. 4:14-cv- 00408, 2014 WL 5783032, at *5 (E.D. Mo. November 6, 2014) (opacity is a proxy for particulate emissions).

6I. The revised spreadsheets show the following number of days of violations involving these pollutants, which cause or contribute to the formation of haze (which are coded with an “H” in the Traceability Code column):

Count I

Refinery reportable events (Ex. 3)	670
Refinery recordable events (Ex. 4)	2,932

Count II

Olefins plant reportable events (Ex. 5)	477
Olefins plant recordable events (Ex. 6)	2,025
Chemical plant reportable events (Ex. 7)	92
Chemical plant recordable events (Ex. 8)	740

In addition, as reflected in the original stipulated spreadsheets, the following number of days of violations involved excessive emissions of HRVOCs under Count III and excessive emissions of VOCs under Count V (Plaintiffs' Ex. 597)⁴:

<u>Count III</u>	18
<u>Count V</u>	32

The total number of days of violations involving emissions of chemicals that cause or contribute to the creation of haze is 6,986.

2. *Violations That Cause or Contribute to Either Chemical Odors or Respiratory Symptoms.*

6J. The Fifth Circuit stated, "For violations that could not contribute to flaring, smoke or haze, the district court should first consider whether the pollutant emitted could cause or contribute either to (a) chemical odors or (b) allergy-like or respiratory symptoms." *Env't Texas*, 968 F.3d at 371.

⁴ Count V covers violations of a federal regulation requiring that flares have a pilot flame burning at all times. The function of the pilot flame is to ignite the gases sent to the flare and enable combustion; the purpose of combustion is to destroy pollutants in the flare gases or convert them to less harmful substances, thereby preventing or reducing their release into the air. Tr. 5-103:3 – 104:9; 5-107:5 – 108:9 [Sahu]; Tr. 3-25:11-20 [Kovacs]. If the pilot flame is not lit, combustion does not occur. 5-104:10-12 [Sahu]. The gases fed into the flares at the Baytown Complex contain hydrocarbons or VOCs, Tr. 3-29:9-20 [Kovacs]; Tr. 5-107:10-19 [Sahu], which contribute to ozone formation and thus haze and smog when they fail to be combusted.

(A). *Pollutants that could cause or contribute either to chemical odors or allergy-like or respiratory symptoms.*

6K. The following pollutants can cause or contribute to chemical odors:

- Ammonia. Tr. 11-60:21 – 62:4 [Robbins].
- Benzene. PX 542; PX 543, p. 1 [ESTC 018154]; Tr. 7-120:16-18 [Brooks]; FOF ¶ 745.
- Carbon disulfide. PX 523, p. 1; PX 533; FOF ¶ 720.
- Ethylbenzene. PX 544; PX 546; FOF ¶ 788.
- Hydrogen chloride. PX 478, p. 3; PX 535; PX 536; FOF ¶ 729.
- Hydrogen sulfide. PX 476, p. 38; PX 540, p. 1; Tr. 7-91:1-9 [Brooks]; 9-161:24 – 9-162:8, 9-163:5-6 [Fraiser]; FOF ¶¶ 634, 636, 639.
- Sulfur dioxide. PX 476, p. 31; PX 526, p. 1; Tr. 7-76:18-22 [Brooks]; FOF ¶ 676.
- Toluene. PX 548; PX 549; PX 550, p. 1; FOF ¶ 773.
- Xylene. PX 552; FOF ¶ 799.

The following pollutants can cause or contribute to respiratory or allergy-like symptoms (independent of their role in forming ground-level ozone, which, as discussed below, itself causes respiratory symptoms):

- Benzene. PX 466, p. 45; PX 542; PX 543, p. 228; FOF ¶ 757.
- Carbonyl sulfide. PX 534; FOF ¶ 726.
- Carbon monoxide. PX 519; PX 520; FOF ¶ 660.
- Ethylbenzene. PX 544; PX 545; PX 546; FOF ¶¶ 791-793.
- Hydrogen chloride. PX 478, p. 3-4; PX 535; PX 536; FOF ¶¶ 728-731, 736.
- Hydrogen cyanide. PX 537; PX 538; PX 539, p. 15; FOF ¶¶ 741, 743.
- Hydrogen sulfide. PX 476, p. 38; PX 540, p. 10; Tr. 7-89:25 – 7-90:14 [Brooks]; FOF ¶¶ 641, 644.
- Nitrogen oxides. PX 521, p. 1-2; PX 522; PX 523; FOF ¶¶ 669-671, 673.
- Opacity and particulate matter. PX 476, p. 20; Tr. 3-48:8 – 3-49:1 [Kovacs]; FOF ¶¶ 179, 607, 815.⁵

⁵ See also Union Elec. Co., 2014 WL 5783032 at *5 (opacity is a proxy for particulate emissions).

- Sulfur dioxide. PX 476, pp. 31-32; PX 524; PX 525; PX 526, pp. 5, 30, 33, 34, 43, & 81; Tr.7-75:24 – 7-76:17; 7-77:2-6 & 7-12 [Brooks]; FOF ¶¶ 680-689, 691.
- Toluene. PX 548; PX 549; PX 550, pp. 6 & 60; PX 551; FOF ¶¶ 779, 782.
- Xylene. PX 552; FOF ¶ 801.

In addition, ground-level ozone causes respiratory problems.⁶ PX 475, p. 8; PX 522; Tr. 7-36:25 – 7-37:2; 7-148:9-19 [Brooks]; FOF ¶¶ 703, 704, 713. The following pollutants cause or contribute to the formation of ozone, and for this reason they are included in the category of pollutants that can cause or contribute to respiratory or allergy-like symptoms:

- Acetaldehyde. PX 476, p. 25; FOF ¶ 707.
- Ethyltoluene. PX 476, p. 26; FOF ¶ 707.
- Formaldehyde. PX 476, p. 25; FOF ¶ 707.
- Highly reactive volatile organic compounds. PX 476, p. 25; Tr. 7-143:17 – 7-144:1 [Brooks]; Tr. 8-205:12-19 [Cabe]. In Harris County, ethylene, propylene, 1,3-butadiene, and butenes are HRVOCs. 30 Tex. Admin. Code §115.10(21)(a) (defining HRVOCs for Harris County).
- Nitrogen oxides. PX 521, p. 2; PX 522; FOF ¶ 668.
- Pentene. PX 476, p. 25; FOF ¶ 707.
- Toluene. PX 476, p. 25; FOF ¶ 707.
- Trimethylbenzene. PX 476, p. 25; FOF ¶ 707.
- Volatile organic compounds. PX 527; FOF ¶ 699.
- Xylenes. PX 476, p. 25; FOF ¶ 707.

⁶ Harris County is out of attainment with national air quality standards for ozone set by U.S. EPA. PX 529; Tr. 2-123:12-20, 2:124-14-20 [Carman]; FOF ¶¶ 833, 834.

(B). Determination of a geographical nexus.

6L. The Fifth Circuit further instructed this Court to conduct a “geographic nexus inquiry” with respect to those violations that can cause or contribute either to chemical odors or to allergy-like or respiratory symptoms. 2020 WL 4345337, at *8.⁷ A geographic nexus is satisfied “if the emission (i) violated a nonzero emissions standard, (ii) had to be reported under Texas regulations, or (iii) is otherwise proven to be of sufficient magnitude to reach Baytown neighborhoods outside the Exxon complex in quantities sufficient to cause chemical odors, allergy-like symptoms, or respiratory symptoms.” *Id.*

6M. Violations of non-zero emissions limits: The stipulated spreadsheets contain a “Reported Emission Limit (lbs/hr)” column. For many, if not most, violations (including all violations under Count I), the applicable emission limit is zero, because the emission was not authorized at all by the applicable permit. In addition, for many emissions under Count II, violations were found when an emission fell below a non-zero Reported Emission Limit but Exxon had specified that the emission was nonetheless “not specifically authorized” by the permit or only “portions of an emission” were authorized. *Env’t Tex. Citizen Lobby*, 2017 WL 2331679, at *18 (ECF No. 257, p. 56). Other violations were found when the

⁷ This inquiry is unnecessary for violations that cause or contribute to flaring, smoke, or haze. *Env’t Texas*, 568 F.3d at 371.

emission exceeded the rate specified by a non-zero Reported Emission Limit. In the Traceability Code column on the revised spreadsheets, the code “O-NZ” indicates violations involving chemicals that can cause or contribute to chemical odors *and* that exceeded a non-zero emission limit. Similarly, the code “R-NZ” indicates violations involving pollutants that can cause or contribute to respiratory or allergy-like symptoms *and* that exceeded a non-zero emission limit. The number of days of violations in each of these categories is as follows:

Chemical odors and violated non-zero emission limit (“O-NZ”)

Count II

Chemical plant recordable events (Ex. 8)	11
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Respiratory/allergy-like symptoms and violated non-zero emission limit (“R-NZ”)

Count II

Olefins plant reportable events (Ex. 5)	9
Chemical plant reportable events (Ex. 7)	18
Chemical plant recordable events (Ex. 8)	25

<u>Count III</u>	18 ⁸
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Total	70
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6N. Violations required by regulations to be reported: As previously noted, emission events involving the release of pollutants above a threshold

⁸ Each of the Count III violations reflected in PX 595 involved an exceedance of the 1,200 lb/hr emission limit set by the Texas HRVOC Rule.

“reportable quantity” trigger public submission of a STEERS report. *See* 30 Tex. Admin. Code § 101.201. Reportable quantities vary by type of pollutant and are established by TCEQ regulation, at 30 Tex. Admin. Code § 101.1(89). The regulation provides that the reportable quantity for each air pollutant is the lowest of the quantities listed in 40 C.F.R. Part 302, Table 302.4; 40 C.F.R. Part 355, App. A; or 30 Tex. Admin. Code § 101.1(89)(A)(i)(III). For any pollutant not listed, the reportable quantity is 100 pounds. *Id.* at § 101.1(89)(A)(ii).⁹ In the Traceability Code column on the revised spreadsheets, the code “O-RQ” indicates violations involving chemicals that can cause or contribute to chemical odors *and* that exceeded the reportable quantity for that chemical. Similarly, the code “R-RQ” indicates violations involving pollutants that can cause or contribute to respiratory or allergy-like symptoms *and* that exceeded the reportable quantity for that pollutant. The number of days of violations in each of these categories is as follows:

Chemical odors and exceeded a reportable quantity (“O-RQ”)

Count I

Refinery reportable events (Ex. 3)	357
Refinery recordable events (Ex. 4)	902

⁹ The reportable quantities for the pollutants at issue here are listed in *Description of Revised Versions of Plaintiffs’ Exhibits 587-88 and 591-94*, ECF No. [XXX], Ex. 1.

Count II

Olefins plant reportable events (Ex. 5)	40
Olefins plant recordable events (Ex. 6)	392
Chemical plant reportable events (Ex. 7)	4
Chemical plant recordable events (Ex. 8)	11
Total	1,706

Respiratory/allergy-like symptoms and exceeded a reportable quantity (“R-RQ”)Count I

Refinery reportable events (Ex. 3)	624
Refinery recordable events (Ex. 4)	1,644

Count II

Olefins plant reportable events (Ex. 5)	288
Olefins plant recordable events (Ex. 6)	864
Chemical plant reportable events (Ex. 7)	40
Chemical plant recordable events (Ex. 8)	354

Total	3,814
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60. **Violations of a sufficient magnitude:** Exxon’s expert David Cabe modeled certain reportable and recordable emission events and determined that, in 144 instances, these events caused an offsite pollutant concentration – that is, a concentration beyond the fenceline of the Baytown Complex – that exceeded an applicable “air comparison value.” Tr. 8-192:22 – 8-193:1, 9-23:19 – 9:25:15, 9-37:13-18 [Cabe]; 10-7:13-18 [Fraser]. FOF ¶ 857. An “air comparison value” refers to one or more of the various government-set exposure thresholds or

standards for air pollutants. Tr. 6-106:2-8 [Parmley]. The magnitude by which these air comparison values were exceeded ranged as high as 21 times the regulatory threshold; in 75 instances, the predicted off-site concentration was more than twice the regulatory threshold. FOF ¶¶ 858; PX 610, 610A, 611 & 611A. This evidence, submitted by Exxon itself, provides proof that certain violations were of “a sufficient magnitude to reach Baytown neighborhoods outside the Exxon complex in quantities sufficient to cause chemical odors, allergy-like symptoms, or respiratory symptoms.” *Env’t Texas*, 568 F.3d at 371. Plaintiffs matched up the modeling results provided by Exxon’s expert, excerpted in Plaintiffs’ Exhibits 610 and 611, with violations in the revised spreadsheets. In the Traceability Code column on the revised spreadsheets, the code “O-M” indicates violations involving chemicals that can cause or contribute to chemical odors *and* were of a sufficient magnitude to cause off-site odors because they exceeded an air comparison value. Similarly, the code “R-M” indicates violations involving pollutants that can cause or contribute to respiratory or allergy-like symptoms *and* were of sufficient magnitude to cause off-site impacts because they exceeded an air comparison value. The number of days of violations in each of these categories is as follows:

Chemical odors and of sufficient magnitude (“O-M”)Count I

Refinery reportable events (Ex. 3)	9
Refinery recordable events (Ex. 4)	66

Count II

Olefins plant reportable events (Ex. 5)	1
Olefins plant recordable events (Ex. 6)	3
Chemical plant recordable events (Ex. 8)	30

Total	109
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Respiratory/allergy-like symptoms and of sufficient magnitude (“R-M”)Count I

Refinery reportable events (Ex. 3)	18
Refinery recordable events (Ex. 4)	76

Count II

Olefins plant recordable events (Ex. 6)	2
Chemical plant reportable events (Ex. 7)	2
Chemical plant recordable events (Ex. 8)	15

Total	113
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3. Total Number of Traceable Violations by Count.

6P. Many of Exxon’s violations meet the Fifth Circuit’s criteria regarding traceability for more than one reason. For example, a flaring event that released more than a reportable quantity of nitrogen oxides (an ozone-forming chemical) would be found to be traceable for contributing to flaring, to haze, and to

respiratory impacts. As a result, the totals listed above add up to more than the actual number of days of violations this Court finds are traceable to the injuries suffered by the members of the Plaintiff groups. To eliminate double-counting, the Court thus provides the following separate tally of days of violations that meet *at least one* of the traceability criteria described by the Fifth Circuit:

Count I

Refinery reportable events (Ex. 2)	1,152
Refinery recordable events (Ex. 3)	4,904

Count II

Olefins plant reportable events (Ex. 4)	484
Olefins plant recordable events (Ex. 5)	2,239
Chemical plant reportable events (Ex. 6)	152
Chemical plant recordable events (Ex. 7)	778

<u>Count III</u>	18
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<u>Count IV</u>	44
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<u>Count V</u>	32
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The total number of days of traceable violations on all counts, taking into account Plaintiffs' voluntary exclusion of violations involving the release of one pound or less of a pollutant, is 9,803.

III. CONCLUSIONS OF LAW

C. Affirmative Defenses

1. Hurricane Ike Defenses

[REPLACING ¶¶ 50 AND 51:]

50. Exxon argues that violations during ten reportable events qualify for an Act of God defense, citing Texas Water Code § 7.215, which provides: “If a person can establish that an event that would otherwise be a violation of a statute within the commission’s jurisdiction or a rule adopted or an order or a permit issued under such a statute was caused solely by an act of God, war, strike, riot, or other catastrophe, the event is not a violation of that statute, rule, order, or permit.” Tex. Water Code § 7.215 (enacted in 1997 and current through the end of the 2015 Regular Session of the 84th Legislature).¹⁰ The Court had previously found this defense inapplicable because § 7.215 is not specifically authorized or permitted by the Texas SIP; its predecessor is. Because the Texas SIP does incorporate an Act of God defense that is located in a different “statutory home” than the one cited by

¹⁰ The ten reportable events are STEERS numbers 113885, 113886, 113887, 114372, 114463, 114601, 114665, 114736, 114755, and 114911. Exxon argues there are 199 days of violations that occurred during these events. *Env’t Texas*, 968 F.3d at 373. Using the revised spreadsheets of violations, Plaintiffs have calculated that the violations resulting from these events which meet the Fifth Circuit’s traceability criteria released a total of 337,561 pounds of pollutants. *See* ECF No. [XXX], Exs. 2, 4 & 6.

Exxon, the Fifth Circuit remanded “for findings on whether Exxon proved its Act of God defense for the relatively small number of violations occurring during Hurricane Ike.” *Env’t Texas*, 968 F.3d at 373.

51. A hurricane is not always an Act of God in the legal sense. *Nat'l Liability & Fire Ins. Co. v. R&R Marine*, No. H-07-3169, 2009 WL 10695626, at *4 (S.D. Tex., October 20, 2009) (“A storm is an act of God as is a soft spring morning. The law does not give Him as much credit, limiting His acts to a ‘loss happening in spite of all human effort and sagacity.’ *The Majestic*, 166 US. 375, 386 (1897).”); *accord Tex. Gulf S.S. Co.*, 263 F. 864, 868 (5th Cir. 1920) (no Act of God defense where party knew or could have ascertained that a hurricane was approaching). “Even strong hurricanes have not been considered legal acts of God.” *Nat'l Liability & Fire Ins.*, 2009 WL 10695626, at *4 (citing *Bunge Corp. v. Freeport Marine Repair*, 240 F.3d 919, 926 (11th Cir. 2001), as holding that Hurricane Opal did not trigger Act of God defense). To prevail on an act of God defense, Exxon must prove that (1) its violations were “due directly and exclusively to an act of nature and without human intervention, and (2) no amount of foresight or care which could have been responsibly required of [it] could have prevented the violations.” *Sentry Select Ins. Co. v. R&R Marine, Inc.*, No. 1:10-cv-553, 2011 WL 7102564, at *5 (E.D. Tex., August 19, 2011), *different portion of recommended decision overruled in part*, 2012 WL 252840 (E.D. Tex., January 26,

2012) (citation omitted). “[T]he act of nature must have been so unusual that it could not have been reasonably anticipated or provided against.” *Id.* The burden of proof lies with the party claiming an Act of God defense. *E.g., Combo Maritime, Inc. v. U.S. United Bulk Terminal, LLC*, 615 F.3d 599, 606 (5th Cir. 2010); *Sentry Select*, 2011 WL 7102564, at *5; *Texarkana Pipe Works v. Caddo Oil & Ref. Co. of La.*, 252 S.W. 813, 816 (Tex.App. – Texarkana 1923); *Fentiman v. Atchison, T. & S.F. Ry Co.*, 98 S.W. 939, 941 (Tex. Civ. App. 1906).

51A. Exxon has not met this burden. The entirety of Exxon’s proof on the Act of God defense was as follows:

117. Prior to Hurricane Ike making landfall, the ExxonMobil Defendants took steps to shut down operations at the Baytown Complex, including shutting down the electricity cogeneration plant that provides electrical power to the Baytown Complex. [Trial Tr. 3-206:4-7, 3-209:3-5].

118. The eye of Hurricane Ike passed directly over the Baytown Complex. [Trial Tr. 3-207:11-12]. Following Hurricane Ike’s passing, the ExxonMobil Defendants took steps to re-start the operations at the Baytown Complex. [Trial Tr. 3-209:16].

119. Hurricane Ike was an “Act of God” as described in section 7.251 of the Texas Water code.

Exxon’s [Proposed] Findings of Fact and Conclusions of Law (ECF No. 216-1), ¶¶ 117-119. Exxon offered no evidence at trial that Hurricane Ike could not have been reasonably anticipated. To the contrary, Exxon acknowledges here that it *did* anticipate the hurricane, and that it shut down operations in anticipation of the hurricane’s passing. Nor did Exxon provide evidence at trial to establish that the

violations in question were due “directly” and “exclusively” to the hurricane. There was no evidence that any of the unauthorized emissions were due to hurricane damage. Rather, all of the violations at issue happened either *before* the passing of Hurricane Ike (during plant shutdown) or *after* its passing (during plant startup), and Exxon’s own actions in stopping and restarting operations were the cause of the violations.

51B. Especially given that hurricanes are a well-known fact of life along the Gulf coast, Exxon has not established that a reasonable amount of foresight and care could not have avoided or minimized the violations. Exxon provided no evidence at trial that violations of this duration and magnitude were a *necessary* consequence of its shutting down its facilities and later re-starting them. Exxon provided no evidence that it took any steps to try to prevent, reduce, or otherwise mitigate emissions violations during this shutdown and startup. Exxon provided no evidence that it would not have been possible to perform the shutdown and startup more gradually, or in phases, so as to minimize any violations. Finally, there is no evidence in the record that Exxon had a hurricane preparedness plan in place or that Exxon actually implemented any such plan, as other refineries do. PX 569, pp. 8-9 (S.D. Tex. consent decree in CAA citizen suit ordering Chevron Phillips Chemical Company to revise and then implement its Hurricane Shutdown

and Startup Plan “to minimize the emission of air contaminants to the extent possible consistent with worker safety”).¹¹

51C. Exxon has not submitted sufficient evidence to establish the Act of God defense in association with the ten reportable emission events occurring before or after Hurricane Ike. Accordingly, given the failure of proof as to the elements of this defense, the Court will not apply the Act of God defense to these violations.¹²

¹¹ *Envt. Tex. Citizen Lobby, Inc., et ano. v. Chevron Phillips Chem. Co.*, C.A. 4:09-cv-02662 (S.D. Tex.) (ECF No. 42).

¹² Exxon has also argued that a proclamation by the Governor of Texas provides an affirmative defense to violations during Hurricane Ike-related emission events, but the Fifth Circuit did not remand on that issue. The Fifth Circuit has not disturbed the Court’s finding that Exxon did not establish the proclamation as a defense. The proclamation was not made part of the Texas SIP, and thus is not available as a defense in a CAA enforcement action. *See Sierra Club v. Tenn. Valley Auth.*, 430 F.3d 1337, 1346-50 (11th Cir. 2005) (explaining why a state provision that provided a defense that the “EPA has never sanctioned … and has yet to accept or reject [the defense] as a proposed SIP revision” is inapplicable). Moreover, the TCEQ guidance related to the proclamation provided: (1) “In no event shall authorized regulated entities create conditions of air pollution or exceed National Ambient Air Quality Standards” (PX 578, p. 3); and (2) owners and operators “shall at all times apply best engineering practices and good air pollution control practices as required by any and all applicable standards to minimize emissions associated with any activities described by this department” (PX 588, p. 1). Exxon did not provide evidence on either of these requirements with respect to Hurricane Ike-related events and violations, and thus did not establish an affirmative defense based on the proclamation.

III. CONCLUSIONS OF LAW

E. Penalties

b. Violator's Full Compliance History and Good Faith Efforts to Comply

[FOLLOWING THE END OF ¶ 60:]

The Court notes that the 6,583 days of proven violations that failed on traceability grounds or were voluntarily excluded by Plaintiffs, while no longer considered actionable and thus not counted in determining the statutory maximum penalty, are still counted in assessing the history of violations. As the Fifth Circuit noted, “the overall number of violations at the Baytown complex remains relevant as part of ‘the violator’s full compliance history’ that a court considers in assessing the amount of each penalty within the statutory range. 42 U.S.C. § 7413(e)(1).” *Env’t Texas*, 968 F.3d at 374.

c. Duration of the Violation

[REPLACING ¶ 64:]

64. The Court next turns to, whether looking to the period of time over which the violations occurred, the duration factor supports imposing a penalty. Under the traceability analysis required by the Fifth Circuit on limited remand, and after subtracting the violations voluntarily excluded by Plaintiffs, the credible evidence establishes that 9,803 traceable violations occurred over an

eight-year period. During that eight-year time period, Exxon averaged more than three traceable violations per day. This is consistent with the Court's earlier finding. *Env't Tex. Citizen Lobby*, 2017 WL 2331679, at *26 (ECF No. 257, pp. 82-83) (more than one violation per day). Accordingly, the Court finds again that the duration factor weighs in favor of assessing a penalty.¹³

e. Economic Benefit of Noncompliance

[FOLLOWING ¶ 70:]

70A. Applying the traceability analysis required by the Fifth Circuit on

¹³ The Court finds even under its previous interpretation of this factor, looking to the individual violation's duration, there are individual violations of a sufficient duration to weigh in favor of assessing penalties. The Court had previously found that any longer violations were balanced out by the numerous cursory violations. The Circuit held utilizing the balancing methodology for analyzing the duration factor was an abuse of discretion. As directed by the Circuit on the first remand, the Court looked to the actionable violations and determined that a sufficient quantity of violations of a sufficient duration occurred to weigh in favor of assessing penalties. *Env't Tex. Citizen Lobby*, 2017 WL 2331679, at *26, n.240 (ECF No. 257, p. 83, n.240) (noting 138 actionable violations that were more than forty-eight hours in duration under Count II). Even after reducing the number of actionable violations as set forth above, the Court determines that a sufficient quantity of violations of a sufficient duration occurred to support the previously imposed penalty. For example, under Counts I and II there remain 120 actionable violations that were more than forty-eight hours in duration and 224 actionable violations that were more than twenty-four hours in duration, during STEERS events alone (even subtracting the violations for which Exxon sought an affirmative defense because of Hurricane Ike, those totals are still significant: 98 and 202, respectively). See revised versions of Plaintiffs' Exhibits 587, 591 & 593 (ECF No. [XXX], Exs. 2, 4, & 6).

limited remand does not alter the Court’s economic benefit determination. The four projects that formed the basis of the economic benefit calculation had the effect, together, of reducing emission events and unauthorized emissions overall. Moreover, each of the four projects addressed, in whole or in part, the types of violations found traceable under the Fifth Circuit’s criteria. More specifically: (1) the Plant Automation Venture broadly addresses early identification and prevention of potential events, which remains “necessary to correct” all of the wide range of violations found to be traceable; (2) the Fuels North Flare System Project addresses the 4,127 days of traceable violations involving flaring; (3) BOP/BOPX Simulators Project addresses emission events at the Olefins Plant, where there were 2,723 days of traceable violations that primarily involved VOCs and other ozone precursors; (4) the Enhanced Fugitive Emissions Monitoring Project, which is designed to locate VOC and HRVOC emissions from leaks, addresses the 1,091 traceable violations that a search of Plaintiffs’ revised spreadsheets finds were caused by “corrosion,” a “leak,” or a “hole.” The fact that Exxon is now liable for 9,803 days of violation instead of 16,386 therefore does not change the Court’s finding regarding economic benefit.

f. Seriousness

[REPLACING ¶ 73:]

73. With respect to the seriousness factor, the Court, based on Fifth Circuit guidance, looks to the overall number and quantitative severity of the emissions or discharges. The Court finds that the overall number of days of actionable violations remaining after the traceability analysis described above, 9,803 days of violation, weighs in favor of finding the violations serious. The Court is unaware of any other environmental enforcement case that has involved as many days of violations. *Compare Natural Res. Def. Council v. Texaco Ref. & Mfg., Inc.*, 800 F. Supp. 1, 23 (finding 3,300 days of Clean Water Act violations to be serious because of their number), *rev'd in part on other grounds*, 2 F.3d 493 (3d Cir. 1993); *PIRG v. Powell Duffryn Terminals, Inc.*, 720 F. Supp. 1158, 1163 (D. N.J. 1989), (386 CWA violations is “signficant” because it is a “large number of violations”), *aff'd in part*, 913 F.2d 64 (3d Cir. 1990).

73A. As to the quantitative severity of the emissions, the Court previously found that approximately ten million pounds of pollutants were released into the atmosphere as a result of the violations in this case. 2017 WL 2331679, at *29.¹⁴ The 6,583 days of violation that failed to satisfy the Fifth Circuit’s traceability criteria, or were voluntarily excluded by Plaintiffs, collectively contributed only a

¹⁴ Plaintiffs’ Exhibit 609.

very small portion of these unauthorized emissions: using the revised spreadsheets, Plaintiffs have calculated the total emissions associated with these violations to be just 88,748 pounds.¹⁵ This represents less than one percent of the 10 million pounds of total unauthorized emissions previously found by this Court. It is still the case that nearly 10 million pounds of pollutants were released into the atmosphere as a result of the 9,803 days of violation the Court finds actionable after performing the traceability analysis.¹⁶ Accordingly, the Court finds that the seriousness factor weighs in favor of the assessment of a penalty and supports the previously assessed penalty amount.

¹⁵ The breakdown of emission totals from violations that either did *not* meet the Fifth Circuit's traceability criteria or were voluntarily excluded by Plaintiffs are calculated by Plaintiffs as follows:

Count I (refinery):	5,630 lbs. (STEERS), 66,305 lbs. (recordables)
Count II (olefins):	248 lbs. (STEERS), 1,947 lbs. (recordables)
Count II (chemical):	2,190 lbs. (STEERS), 12,428 lbs. (recordables)

This adds up to 88,748 pounds. *See* revised versions of Plaintiffs' Exhibits 587-88, 591-94 (ECF No. [XXX], Exs. 2-7).

¹⁶ As noted in footnote 10, the traceable Hurricane Ike-related violations for which Exxon asserts an affirmative defense collectively released 337,561 pounds of pollutants – or just over 3% of the 10 million pound total. Even if these emissions were also subtracted, the Court would still find the remaining approximately 9.6 million pounds of emissions to be quantitatively serious.

g. Balancing the Factors

[REPLACING ¶¶ 77 AND 78:]

77. After subtracting the violations that failed to satisfy the Fifth Circuit's traceability criteria or were voluntarily excluded by Plaintiffs, Plaintiffs calculate the statutory maximum penalty as follows:¹⁷

Count I	6,056 days of violation with a \$211,960,000 penalty
Count II	3,653 days of violation with a \$127,855,000 penalty
Count III	18 days of violation with a \$630,000 penalty
Count IV	44 days of violation with a \$1,540,000 penalty
Count V	32 days of violation with a \$1,120,000 penalty.

The Court agrees with this calculation. As the Court found Exxon liable on the refinery violations in Count I, it will not include the refinery violations in Count II when calculating the maximum penalty (and they are not included in the calculations above). The total maximum penalty is, therefore, \$343,105,000.

78. Plaintiffs have submitted proposed findings of fact and conclusions of law that **adopt a bottom-up approach**, which calculates the penalty at an amount that is **fifty percent** higher than the economic benefit from noncompliance.¹⁸

¹⁷ As on the first remand, Plaintiffs apply a penalty rate of \$35,000 per day across the board, given that approximately half the violations occurred when the rate was \$32,500 and half when the rate was \$37,500. Defendants do not contest this specific point in determining the maximum penalty. Therefore, as it is uncontested, the Court adopts this methodology as well.

¹⁸ *Plaintiffs' Proposed Findings of Fact and Conclusions of Law Following Remand*, ECF No. 253, Exhibit 1, ¶ 52.

Therefore, as the Court has discretion as to which method to follow, the Court adopts the method proposed by Plaintiffs. The Court determined the economic benefit from noncompliance to be \$14,249,940.¹⁹ Using Plaintiffs' proposed methodology for calculating the penalty (which includes a 50% multiplier), the resulting penalty is \$21,374,910. The Court determines, considering its finding that Exxon made a good faith effort to comply, the amount is sufficient to account for the factors that weighed towards assessing a penalty. The majority of the factors weigh towards imposing a penalty, which the Court determines justifies an increase from the base economic benefit from noncompliance number. Subtracting the \$1,423,632 already paid by Exxon in penalties, the resulting penalty amount is \$19,951,278. The reduction in the number of violations as a result of the analysis on limited remand does not warrant a rebalancing of the factors that would yield a different penalty amount from the one that has already been imposed.

Accordingly, the Court imposes a penalty of \$19,951,278.

Dated: , 2020

United States District Judge

¹⁹ Plaintiffs' proposed findings of fact and conclusions of law utilized a higher base amount (approximately \$28 million); however, as the Court rejected Plaintiffs' theory that led to the higher base amount, the Court uses the amount in the actual finding to calculate the penalty. *Supra* ¶ III.69, III.69 n.248; *Plaintiffs' Proposed Findings of Fact and Conclusions of Law Following Remand*, ECF No. 253, Exhibit 1, ¶ 52.